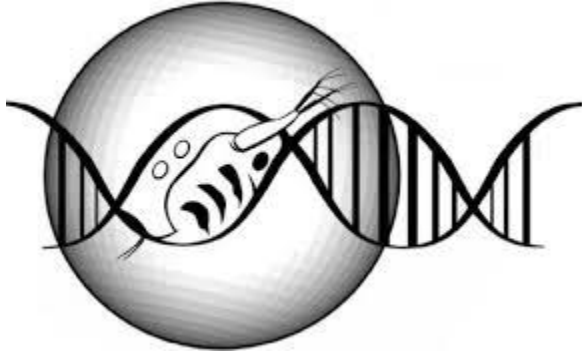
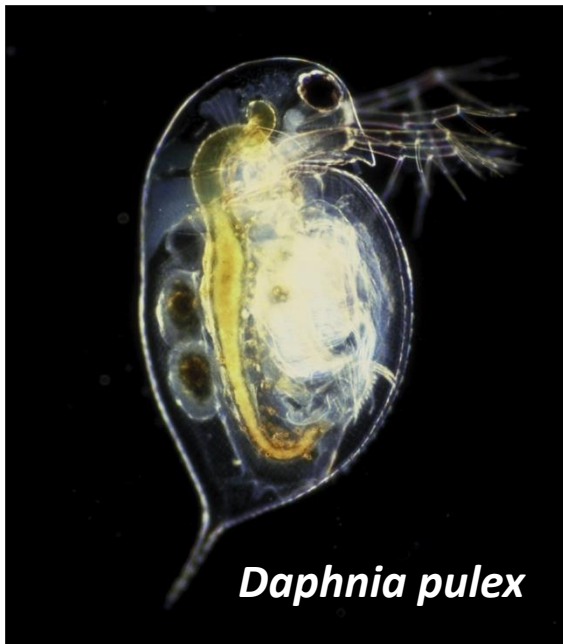


BIO Advisory Committee Meeting
March 2014

OPERATING DEFINITIONS:

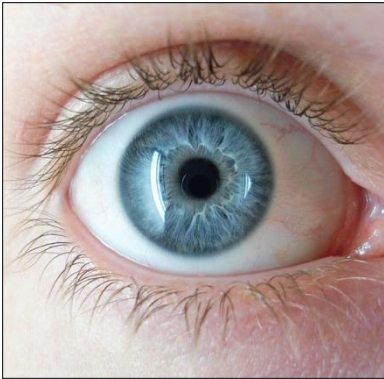


- **Genome**: the full complement of genetic material within an organism

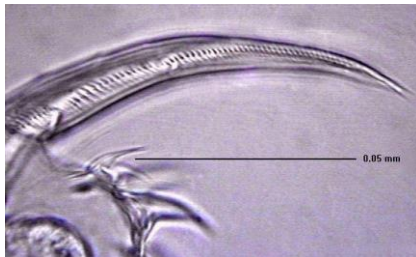
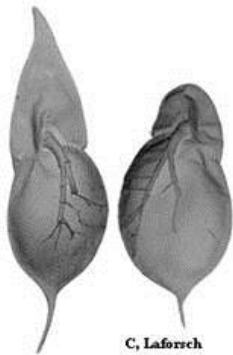
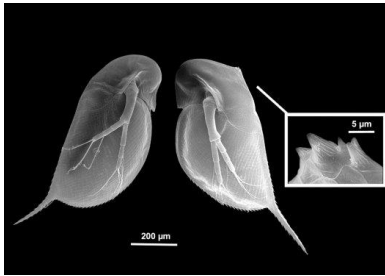


- **Phenome**: the physical, behavioral and molecular characteristics of an organism resulting from the interaction of the genome and the environment

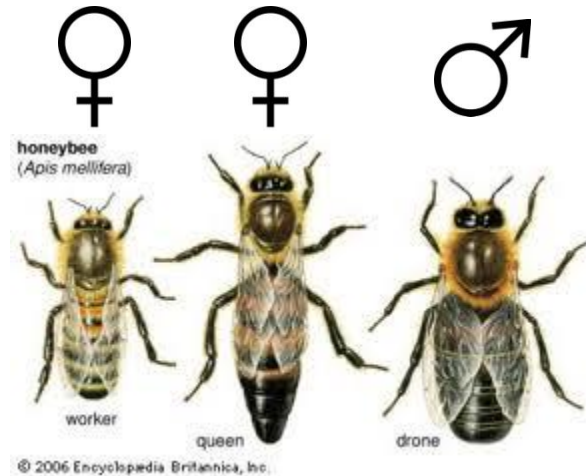
This is an old question...



....but it is also a new question



Daphnia sps.



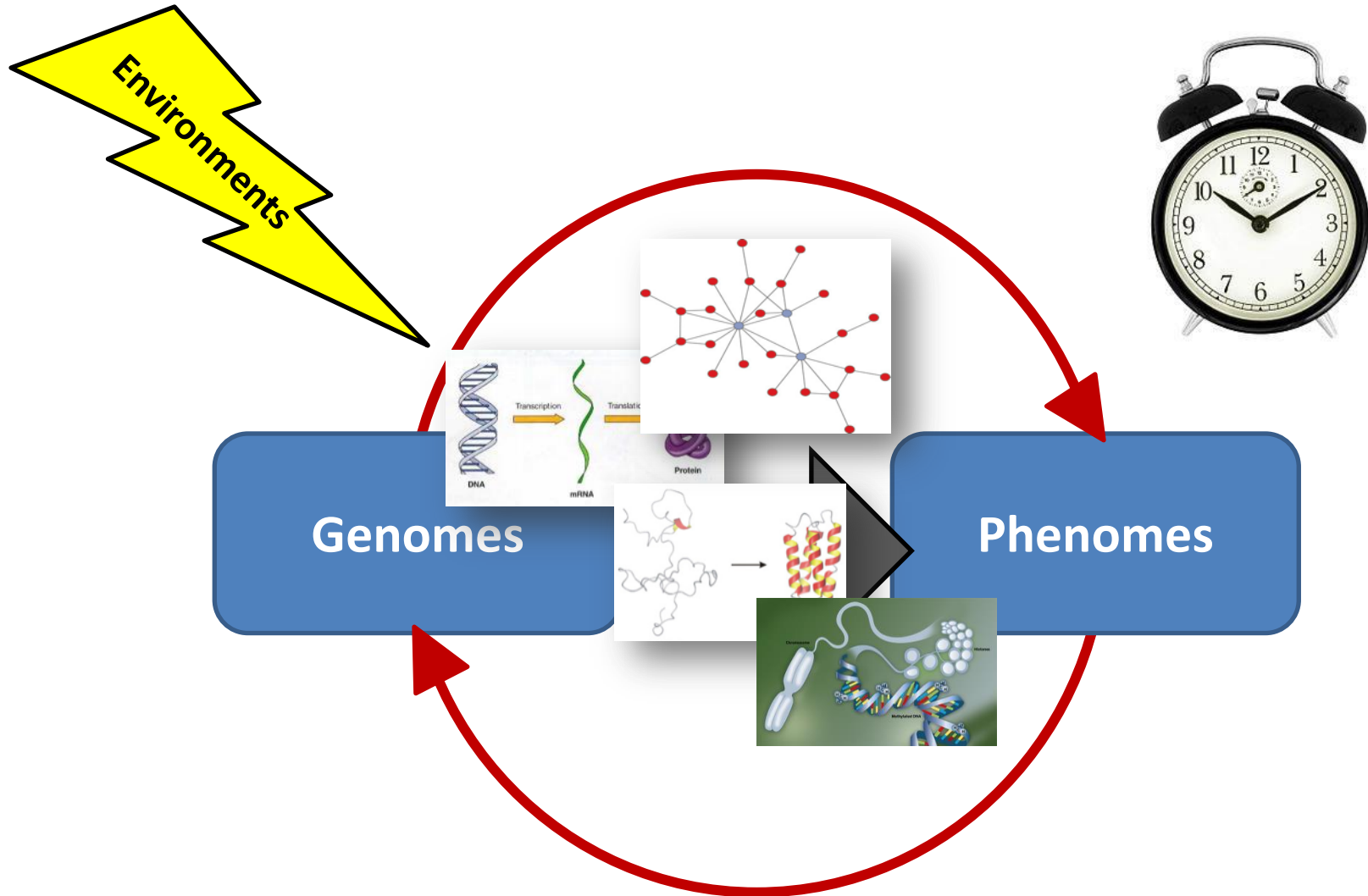
↑ Royalactin



Honeybee

← Kairomones

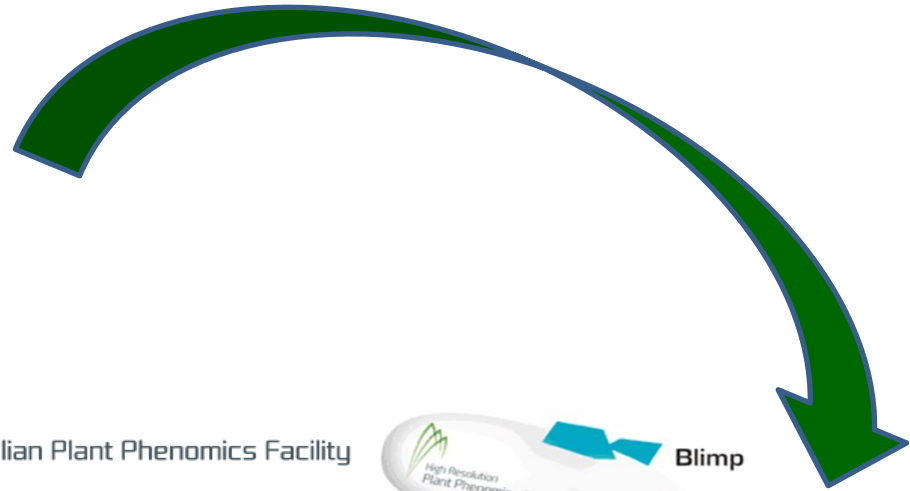
...at increasing levels of detail



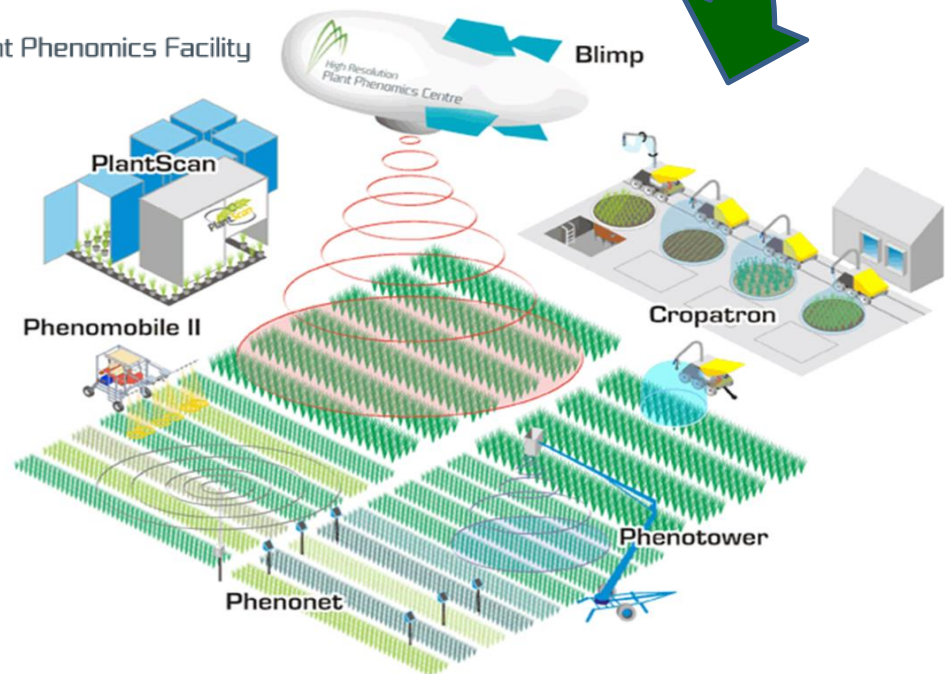
... in the laboratory and the field



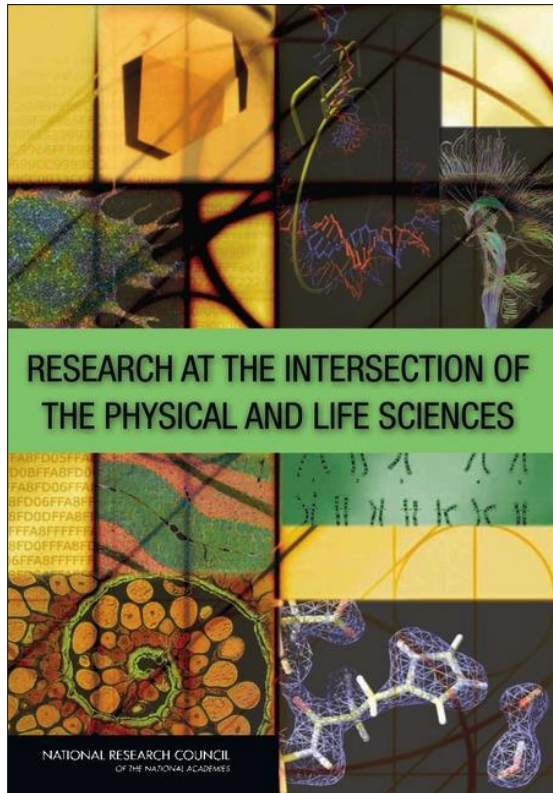
Australian Plant Phenomics Facility



Lots of data!



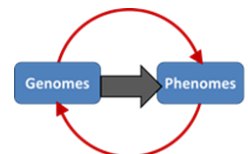
BIO Exploration of G2P



- MCB/USDA workshop report
- IOS workshop reports
- National Research Council Report
- G2P Working Group White Paper

Community Consultation

- BIO will post a community wiki
 - Framing statement
 - Request for feedback
 - Key **questions**, **issues** and **opportunities**
 - **Bottlenecks** impeding progress and **remedies**
 - New **strategies** that can be used for engaging and enhancing an **interdisciplinary workforce**
 - Improvements needed for **multi-dimensional integration of data over multiple scales**
- Follow up workshops and planning activities



A Few of the Challenges Going Forward

- Defining the scope of G2P
- Capitalizing to the full extent on existing investments
- Identifying areas where BIO can make additional strategic investments
 - Tools for high-throughput phenotyping in models and non-models
 - Data management, analysis, and standards
 - Integration of data across scales
 - Visualization of outcomes



A good hockey player plays where the puck is. A great hockey player plays where the puck is going to be.

Wayne Gretzky



Discussion

